

## **MODEL TRAIN WIRELESS BI-DIRECTIONAL COMMUNICATION PROTOCOL**

### **ABSTRACT OF THE DISCLOSURE**

Methods and apparatuses implement a bi-directional model train communications protocol compatible with existing uni-directional communications protocols. In one specific embodiment, the existing uni-directional Lionel Train Master command set is expanded utilizing the checksum error nibble to flag an alternative command signal format. This expanded command set is in turn utilized to transmit a command inquiry signal from the base unit to a specifically addressed element. The addressed element in turn transmits a response based upon the expanded command set. Older model railroad elements not configured to recognize the expanded command set, regard the command inquiry signal as a transmission error and are unaffected. Newer model railroad elements not specifically addressed by the command inquiry signal ignore the command and continue operation.

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